



Derbyshire
Wildlife Trust

Guiding Principles for **WOODED HABITAT CREATION** in the Peak Fringe & Lower Derwent NCA



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1. INTRODUCTION

1.1 RATIONALE FOR WOODED HABITAT EXPANSION IN THE PEAK FRINGE NATIONAL CHARACTER AREA

The Peak Fringe and Lower Derwent is a national character area covering approximately 37,800 hectares and is entirely within Derbyshire. The name ‘Derwent’ is derived from the ancient celtic word ‘derventio’ meaning ‘a valley thick with oaks’, making it an ideal landscape in terms of heritage for wooded habitat expansion. This is supported by Natural England’s Peak Fringe and Lower Derwent National Character Area (NCA) Profile 50 which highlights woodland and wooded habitats such as hedgerow and wood pasture as a key characteristic of the landscape. A map showing the outline of the NCA is provided in Appendix 2. Creation of new wooded habitats would contribute towards objectives within the UK Government’s Environment Improvement Plan (2023) including:

- Increasing woodland cover
- Creating wildlife-rich priority habitat
- Improving water quality
- Safeguarding and enhancing natural beauty

Flooding is a major issue along the Derwent catchment, with major flooding events in 2019, 2020 and 2023, and there are many positive effects that an increase in wooded habitats has on water retention in the landscape, reducing the risk and severity of downstream flooding. Research by the Forestry Commission

has demonstrated that management of existing woodlands and targeted tree planting can significantly slow the flow of overland water and strategically located wooded habitat creation could contribute significantly to reducing flooding along the Derwent catchment. This would help to protect historic structures and buildings along the rivers which are a key feature of the World Heritage Site.

Restoration of lost hedgerows, woodland and other wooded habitats would help to restore and protect the historic pattern of enclosure which is an important characteristic of the Peak Fringe and Lower Derwent landscape. Creation of wooded habitats also benefits farming which is the dominant land use in the area, and can help to support rural communities through the diversification of farming practices. Championing practices such as agroforestry and bringing wooded habitats into favourable management would help bring new opportunities to businesses which are being forced to adapt to challenging economic conditions, safeguarding the future prosperity of the landscape.

1.2 WHAT IS A ‘WOODED HABITAT’?

Wooded habitats can refer to a range of different habitats. This can mean closed canopy woodland, but also refers to wood pasture and parkland, hedgerows, traditional orchards, scrub and individual and boundary trees – essentially any habitat where woody trees and shrubs are an important component. DWT’s Derwent Living Forest programme aims to deliver 30,000ha of new wooded habitat within the Derwent catchment by 2050, and the term ‘wooded habitat’ is therefore used throughout this document to incorporate the wide range of habitat types that this can incorporate.

An increase in wooded habitats and ecological connectivity would provide myriad ecosystem services to the Peak Fringe area, including:

Biodiversity

All wooded habitats provide valuable habitat for a wide range of flora and fauna. Well managed and maintained wooded habitats can provide connective corridors enabling species to move more easily through the landscape, connecting up fragmented pockets of other habitats and enabling species to respond to changes in climate by migrating to areas with more favourable conditions. Expansion of existing ancient woodlands through new habitat creation buffers these irreplaceable habitats from the impact of human activities, safeguarding them for future generations and for wildlife and helps to create ecotones – valuable transitional areas between different habitats which are rich in biodiversity value.

Natural Flood Management (NFM)

Flooding is a major issue in the Derwent catchment, with many towns along the river Derwent and its tributaries experiencing flooding on a regular basis. In October 2023 alone, storm Babet caused a reported £1.3m of damage to infrastructure in Derbyshire, affecting 1,675 properties and businesses¹. Trees and shrubs take up water through their roots from the soil and intercept the amount of rainfall reaching the ground by up to 45%, and planting of woodlands and hedgerows across slopes helps to intercept surface water runoff and increases the “surface roughness” of the landscape, improving its ability to intercept rainfall.

The root systems of trees and shrubs improve the structure of the soil, reducing compaction from intensive agricultural activity and improving the capacity of the soil to store water. The roots of vegetation also knit soil together more effectively, reducing the rate of soil erosion, with the additional benefit of improving water quality by reducing the quantity of sedimentation and pollution downstream.

Climate Change and Air Quality

Trees and shrubs help to mitigate human-induced climate change through sequestration of atmospheric carbon and can reduce particulate pollution.

Landscape

By increasing the cover of wooded habitats this helps to increase the diversity of the landscape, contributing to its character and resilience. Deciduous woodland, hedgerows and trees are a key characteristic of the Peak Fringe NCA and increasing the extent of semi-natural habitats such as woodlands, hedges is listed as a key environmental opportunity in the NCA profile².

Support for Rural Communities

Restored hedgerows and well-managed woodlands have direct and indirect benefits for farming such as shelter for livestock, reduced soil erosion and potential for additional income streams through productive woodlands and emerging ecosystem service markets. Agroforestry offers an additional opportunity for landowners to simultaneously diversify their businesses and increase production whilst restoring wooded habitats through silvopasture and silvoarable practices – combining tree and shrub cover with crop and livestock farming.

1.3 WHY ARE GUIDING PRINCIPLES NEEDED?

The Peak Fringe has been heavily influenced by human society, particularly since the industrial revolution, resulting in a layered landscape with a plethora of cultural, ecological and geological values. As a result, there are a significant number of European and national nature conservation, geological and heritage designations (Special Areas of Conservation, Special Protection Areas, Sites of Special Scientific Interest, World Heritage Sites and Scheduled Monuments) to be considered. A large proportion of the NCA is also covered by the Derwent Valley Mills UNESCO World Heritage Site (DVMWHS) and its buffer zone, owing to the cultural significance of the area as the birthplace of the industrial revolution.

New wooded habitat creation must therefore account for the unique sensitivities present within the Peak Fringe and follow the principle of “the right habitat in the right place” and respect the cultural sensitivity of the landscape.

The Peak District National Park Authority has developed a comprehensive Wooded Landscapes Plan, offering guidance on the creation of wooded habitats within the national park. This Guiding Principles document builds upon the key principles of the Wooded Landscapes Plan while also extending its scope to include areas of the Peak Fringe & Lower Derwent NCA beyond the national park’s boundaries.

The UK government has set ambitious targets for increasing tree cover in England, and as such there will be numerous stakeholders looking for opportunities to deliver on this target. This document is intended to provide guidance to landowners, land managers and advisors and other stakeholders which will complement existing resources and provide a consensus approach to meet environmental and nature recovery targets.

There are myriad opportunities for creation and expansion of wooded habitats within the Peak Fringe. Due to the already well-wooded nature of the NCA, new woodland creation is unlikely to fundamentally alter the character of the landscape, and the proximity of much of the NCA to urban fringe areas provides opportunities to create community woodlands. There are opportunities to use nature-based solutions to tackle flooding, increase connectivity between ancient woodlands through connecting them up with new woodland and scrub, and wood pasture would be an excellent way to maintain open space around existing woodlands to complement and support traditional farming practices and rural communities

2. KEY FEATURES AND DESIGNATIONS

Where designations are present it is critical that these are identified at an early stage so that they can be incorporated into any habitat creation plans. These features may relate to ecological, geological, historic landscape or access and habitat creation should account for their presence in accordance with the principles outlined in Table 1 at the end of this document.

A list of relevant organisational stakeholders is included in chapter 5 – these should be consulted in relation to new woodland design to ensure that sensitive sites and designations are protected.

DERWENT VALLEY MILLS UNESCO WORLD HERITAGE SITE (DVMWHS)

The most significant area of cultural significance is the Derwent Valley Mills UNESCO World Heritage Site, awarded to the area due to its “Outstanding Universal Value”. This world heritage site is almost entirely contained within the Peak Fringe and Lower Derwent NCA and is of international significance owing to its role as the birthplace of England’s industrial revolution. It includes parts of Matlock and Derby and features of note are primarily concentrated along the River Derwent, including historic mills and weirs and structures associated with the Cromford Canal. The core area of the world heritage site comprises 1115.21ha of the NCA (approximately 3%). The designation also includes a buffer zone of 3826.51ha (approximately 10.29% of the total NCA). The purpose of the designation is to prevent the loss of sites of international significance, and the responsibility to protect and enhance the characteristics of the World Heritage Site lies with the local planning authorities. Significant buildings and features related to the WHS include (but are not limited to):

- Watermills, warehouses, counting houses, offices, chimneys, mill workers’ houses
- Water courses, aqueducts, culverts, weirs, canals, reservoirs, flood bunds
- Tramways, railways, turnpike roads
- Enclosure field boundaries, traditional 18th/19th century field patterns, ancient woodland, pastoral farmland, designed landscapes and tree plantations

Objective 1.8 of the 2020-2025 Management Plan for DVMWHS is:

“Promote the appropriate stewardship of the relict 18th century rural setting and ‘natural environment’ of the Derwent Valley Mills World Heritage Site and its Buffer Zone to ensure conservation of functionally linked attributes and elements and promote biodiversity within this framework.”

“Act 1.8.1. Promote the production of a land management framework that builds on established Landscape Character Areas and the historic landscape characterisation to inform the appropriate land management of the ‘natural’ relict 18th century landscape and promote biodiversity.”

There are 43 scheduled monuments within the Peak Fringe and Lower Derwent, most notably:

- Seven barrows and cairnfields including Rodknoll fancy barrow and two barrows at Bank Top
- Nine castles and moated sites including Castle Hill motte and bailey castle, mostly concentrated across the southern half of the NCA
- Ravensdale deer park, lodge, mill and fishpond
- Butterly Gangroad & Fritchley Tunnel
- Remains of Darley Abbey
- Lead mining remains around Chesterfield and Matlock
- Medieval settlements and field patterns at Mugginton, Hlland and Callow

Also within the Peak Fringe and Lower Derwent NCA are 1482 listed buildings, three registered parks and gardens covering approximately 13.53ha in total, including 6.6ha at Willersley Castle.

¹ <https://www.derbytelegraph.co.uk/news/local-news/huge-financial-cost-storm-babet-9133583>

² <https://publications.naturalengland.org.uk/publication/5048261324832768#:~:text=The%20Derbyshire%20Peak%20Fringe%20and,Coal%20Measures%20to%20the%20east.>

Given the significance of the cultural heritage of the area it is essential that habitat creation proposals should consult with Historic England and with Derbyshire County Council’s Conservation, Design and Heritage team. This is particularly important where proposals fall within the boundary of DVMWHS or where they are located in close proximity to scheduled monuments or listed buildings. This will ensure that any historic assets can be incorporated into the design of new habitats.

PEAK DISTRICT NATIONAL PARK

The Peak District National Park overlaps with the NCA in the northwest, covering approximately 2350ha (approximately 6.32% the total area of the NCA). The Peak District is designated as a national park due to its natural beauty and cultural heritage. The Peak District National Park Authority (PDNPA) have statutory obligations to conserve and enhance the natural beauty, wildlife and cultural heritage of the area and to promote opportunities for the understanding and enjoyment of the parks’ special qualities by the public.

PEAK DISTRICT MOORS SPECIAL PROTECTION AREA (SPA)

This European designated site, also known as South Pennine Moors Phase I, is designated due to its importance for the following bird species, all of which represent a maximum of 2% of the total UK breeding populations:

- Short-eared owl *Asio flammeus*
- Merlin *Falco columbarius*
- European golden plover *Pluvialis apricaria*

Approximately 0.23ha of this SPA are within the NCA.

SOUTH PENNINE MOORS SPECIAL AREA OF CONSERVATION (SAC)

This SAC is a mosaic of upland habitat types primarily comprising upland heath and scrub and bogs, marshes and fens. The following habitat types are the primary reason for its designation:

- European dry heaths
- Active blanket bogs
- Old sessile oak woods with *Ilex* and *Blechnum*



Other habitat types present as a qualifying feature but not a primary reason for designation:

- Northern Atlantic wet heaths with *Erica teralix*
- Transition mires and quaking bogs

Approximately 0.23ha of this SAC are within the NCA.

PEAK DISTRICT DALES SAC

This SAC is a mosaic of habitat types but primarily comprises semi-natural dry grassland and broadleaved woodland. There are two areas of this SAC within the NCA – one in Cromford and the other just north-west of Thorpe, comprising 5.29ha in total. The following habitat types are listed as a primary reason for designation within the SAC:

- Semi-natural dry grasslands and scrubland facies on calcareous substrates – important orchid sites
- *Tilio-Acerion* forests of slopes, screes and ravines

Other habitats present as qualifying features but not listed as primary reasons for designation:

- European dry heaths
- Calaminarian grasslands of the *Violetalia calaminariae*
- Alkaline fens
- Calcareous and calcshist screes of the montane to alpine levels
- Calcareous rocky slopes with chasmophytic vegetation

The SAC also has the following species present with are listed as a primary reason for designation:

- White-clawed crayfish *Austropotamobius pallipes*

And other species present but not listed as a primary reason for designation:

- Brook lamprey *Lampetra planeri*
- Bullhead *Cottus gobio*

SITES OF SPECIAL SCIENTIFIC INTEREST

17 sites are wholly or partially within the NCA, comprising a total of 385.21ha (approximately 1.04% of the total area of the NCA). These sites are designated for a range of features which may be biological or geological and may include rare or notable habitats and/or species reliant on the specific conditions found at these sites. There are no extensive areas of SSSI within the NCA, and these smaller SSSI’s can be viewed using Defra’s MAGIC map resource.

PRIORITY HABITATS AND NON-STATUTORY DESIGNATED SITES

Within the NCA are the following priority open habitats:

- Deciduous woodland (2821.87ha)
- Good quality semi-improved grassland (321.77ha)
- No main habitat but additional habitats present (283.35ha)
- Lowland meadows (165.81ha)
- Lowland dry acid grassland (124.02ha)
- Coastal and floodplain grazing marsh (45.79ha)
- Lowland heathland (42.55ha)
- Traditional orchard (25.57ha)
- Upland heathland (23.82ha)
- Lowland calcareous grassland (11.99ha)
- Lowland fens (8.05ha)
- Purple moor grass and rush pastures (6.25ha)
- Grass moorland (0.16ha)
- Upland calcareous grassland (0.07ha)

Most of these habitats can co-exist with wooded habitat and a valuable mosaic of wooded and open habitats can be developed. However, where these habitats are recorded as present or are suspected to be present, careful planning and design will be required to protect them, and created of new wooded habitats may not always be the most appropriate course of action. It is crucial that new wooded habitat creation is done sensitively to ensure that the principles of the right habitat in the right place are adhered to.

Non-statutory designated sites are sites selected by the local planning authority to provide a degree of protection to local sites of substantive nature conservation value, known as Local Wildlife Sites (LWS) in Derbyshire. There are 293 LWS and 219 potential Local Wildlife Sites (pLWS) within the NCA totalling approximately 2479.18ha (6.33% of the total NCA area) and 808.05ha (2.06% of the total NCA area) respectively. LWS are wildlife-rich sites selected for their local nature conservation value and can be designated for a broad range of reasons including the presence of locally important and distinctive habitats and species. pLWS are sites which have been shortlisted for their potential nature conservation value but which have not yet been formally surveyed and assessed by the relevant review group. Data concerning local non-statutory sites is held by Derbyshire Biological Record Centre (DBRC).

LANDSCAPE AND ACCESS

The Peak Fringe and Lower Derwent NCA profile describes the area as a “transitional zone between the Peak District National Park and the heavily settled Derbyshire Coal Measures. It includes numerous outlying ridges, separated by impressive river valleys.” It has two Statements of Environmental Opportunity which directly address woodland and wooded habitat creation:

- SEO 1: Protect and manage the adaptive capacity of this transitional National Character Area, and its geodiversity and biodiversity value. Manage and increase the native broadleaved woodland resource for multiple benefits including biodiversity, atmospheric carbon regulation, soil erosion, controlling water run-off and contributing to coherent habitat networks, while protecting intrinsic landscape character.
- SEO 4: Protect and enhance the rivers Derwent, Amber and Ecclesbourne (and their flood plains) – as well as the National Character Area’s reservoirs and more minor watercourses – for their role in providing a water supply and regulating water flow, and for their biodiversity, landscape and recreational value.

Within the NCA the landscape character has been further subdivided into six distinct Landscape Character Types (LCT):

- Enclosed Moors and Heaths
- Wooded Slopes and Valleys
- Wooded Farmlands
- Gritstone Heaths and Commons
- Settled Farmlands
- Riverside Meadows

These are broad descriptions which outline key features of the local landscape that contribute to its local character. Although these are mapped with clear boundaries, in reality there are transitional zones between each of the LCTs. DCC have produced planting and management guidelines for each LCT, designed to give stakeholders an overview of tree and woodland character and which species are most typical in that landscape.

Proposals should consider impacts upon the historic landscape where they are located within the core area of DVMWHS. This should include reinstatement of historic hedgerows where these have been lost along field boundaries, and taking an approach which is sympathetic to the character of this with enclosed field separated by hedgerows and with small to medium parcels of woodland. New woodland creation should be sympathetic to existing field patterns. Creation of wood pasture within open field would represent a good comprise, improving ecological connectivity whilst respecting the historic field pattern.

All wooded habitat creation throughout the Peak Fringe and Lower Derwent NCA should be in accordance with the guidance outlined in Section 6: Design Principles.

3. LANDOWNERSHIP AND TENANCY

Peak Fringe and Lower Derwent has a broad range of landownership and tenancies, with land use as varied as commercial forestry, agriculture (majority livestock farming) and moderate-sized urban areas including Matlock. All relevant landowners and occupiers must be consulted on habitat creation proposals, and graziers and tenants should be consulted on all woodland creation proposals to understand their potential impact on livestock management, including provision of drinking water and field access.



4. ORGANISATIONAL STAKEHOLDERS AND CONSULTEES

4.1 STATUTORY CONSULTEES

The following organisations are agencies responsible for regulating the administration of some of the types of wooded habitat creation outlined in this document in the Peak Fringe and Lower Derwent NCA.

4.1.1 ENVIRONMENTAL IMPACT ASSESSMENTS FOR AFFORESTATION

The Forestry Commission are the agency responsible for regulating the creation of new woodland in England. All woodland creation proposals over 0.5ha will require some level of consultation with the Forestry Commission and may require Environmental Impact Assessments³ depending on their location and size. Wooded habitat creation which is not woodland (e.g. hedgerow planting, wood pasture creation) does not require consent from the Forestry Commission.

4.1.2 WATERCOURSES AND LAND DRAINAGE

Habitat creation works in proximity to watercourses may require consent. The following authorities should be consulted:

- Environment Agency – for works within 8m of a Main River⁴ or within its floodplain
- Lead Local Flood Authority - Derbyshire County Council – for works within or adjacent to an Ordinary watercourse⁵

4.2 OTHER RELEVANT CONSULTEES

4.2.1 ECOLOGY

- Natural England
- Forestry Commission

- Derbyshire Wildlife Trust
- Derbyshire Biological Record Centre
- Woodland Trust
- Royal Society for the Protection of Birds (RSPB)
- Peak District National Park Authority

4.2.2 ACCESS GROUPS

- Derbyshire County Council
- Peak District National Park Authority
- Derby and Derbyshire Local Access Forum
- Peak District Local Access Forum

4.2.3 CULTURAL HERITAGE

- Derbyshire County Council’s Conservation, Heritage & Design Team
- Historic England
- PDNPA Cultural Heritage Team

4.2.4 GEOLOGY

- East Midlands Geological Society

³Further information on EIA requirements: <https://www.gov.uk/guidance/environmental-impact-assessments-for-woodland>

⁴EA’s Statutory Main River Map: <https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a56386>

⁵Any private ditch, pipe, culvert, sough, drain etc. not managed privately or by a water company is classed as an ordinary watercourse



5. DESIGN PRINCIPLES

The purpose of this document is to provide broad guidance on the most appropriate methods, location and type of habitats in the context of the Peak Fringe & Lower Derwent NCA. Therefore, detailed information on exactly how to create these habitats falls outside of the scope of this document. Links to suitable advice on planting and management of new habitats have been included where necessary.

New habitat creation should wherever possible prioritise areas which are currently generally low in their biodiversity value within sites, particularly where these areas are adjacent to existing woody habitats that would benefit from expansion and increased connectivity. Good examples of these types of habitats within the context of the Peak Fringe could include poor semi-improved pasture, floodplain grasslands in poor condition, former arable land, bracken slopes and improved pasture and grassland.

Derbyshire Wildlife Trust advocate prioritising natural regeneration of wooded habitats wherever this is possible. However, it is recognised that due to the nature of the landscapes which have been heavily modified and managed by humans for centuries, that this may not always be viable. Therefore this guidance also covers creation of habitats through planting such as hedgerows and lone trees.

5.1 WOODLAND & SCRUB

Creation of new woodland and scrub habitats should wherever possible seek to follow the Lawton Principles of bigger, better, more and joined up, whilst remaining mindful of archaeological, geological, cultural and historic constraints unique to the Peak Fringe. A good starting point for new woodland would be seeking to expand existing woodland and plantations, as well as increasing their naturalness through increasing woody species diversity and creating transitional areas to provide greater connectivity between the wooded and open habitats such as grassland and heathland.

The methods of creation below may include just one technique, but a mix of different methods is encouraged e.g. prioritising natural regeneration, but with supplementary planting and/or direct seeding where necessary to support the faster establishment of a diverse habitat.

The preferred method of woodland creation should be natural colonisation⁶ wherever possible. Although this method takes longer than planting, in the long-term this tends to result in a more natural woodland structure, as self-seeded plants will be better adapted to local environmental pressures and conditions. The distribution of trees will be more random than with planted schemes, leading to better structural diversity and creating a more complex ecosystem. The suitability of this woodland creation method will rely upon a suitable seed source being present in close proximity to the site, and some ground preparation such as scarification may be required to create a suitable substrate for seeds to germinate in even adjacent to existing woodland where the sward is dense.

Where natural colonisation is not feasible direct seeding should be considered as a second option. This will result in a similarly natural woodland structure to natural colonisation, however critically does not rely on the presence of a seed source nearby to be successful, and tree species can be selected to result in higher species diversity. This method may be particularly effective in upland situations and on steep slopes where the substrate is not deep enough for widespread

⁶https://assets.publishing.service.gov.uk/media/6181586d8fa8f5297cc02cd4/FC_Natural_Colonisation_Report_HP_1_Nov.pdf

tree planting, although it may require sowing at a high density to counteract seed predation by small mammals and may require protection from browsing herbivore pressure during early stages of tree development. Direct seeding will require ground preparation, similar to natural colonisation. Another advantage of this method over natural colonisation is that the success can be evaluated within 2-3 years following seeding, enabling further woodland establishment interventions at an earlier stage where necessary.

Planting of trees enables more rapid establishment, species composition can be selected specifically and can help with community engagement, with voluntary support during the planting phase. A planting density of 1,600-2,500 is usually recommended to aid early canopy closure, however schemes should avoid planting in regimented rows and should seek to plant in a more random pattern to develop a more natural woodland structure. When planting, trees should be of local provenance to the site and should be sourced from UK-based tree nurseries to minimise biosecurity risks such as importing new diseases to the UK.

To mimic natural colonisation it can be useful to focus on pioneering tree species such as silver birch (*Betula pubescens*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and rowan (*Sorbus aucuparia*), or native willows (*Salix spp.*) in wetter sites which will grow quickly, help to restore soil fertility where required and help to establish the site as young woodland. This can then be supplemented by thinning and planting with other canopy species such as oak (*Quercus spp.*), which will be better protected from the elements by the pioneer species which will eventually give way to long-lived canopy species, particularly if working on exposed sites.

Woodlands should be planned in accordance with UKFS guidance and be designed according to the principles set out in the Woodland Trust’s Woodland Creation Guidance⁷ to maximise their benefits to nature recovery.

Soils should be a key consideration when designing woodland, and design should reflect the local geological conditions and check resources such as the UK Soils Observatory⁸. Much of the Peak Fringe NCA has similar geology and soils, the most frequently recorded of which are:

- 17 - Slowly permeable seasonally wet acid loamy and clayey soils
- 6 - Freely draining slightly acid loamy soils
- 18 - Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils

When planting or direct seeding a site, species selection should be appropriate to the site and to the Landscape Character Type and be informed by the planting and management guidance set out by PDNPA and Derbyshire County Council. Plans should also take into account National Vegetation Classification (NVC) classifications which are appropriate to the site – the UK Soils Observatory (UKSO) has an online map showing how woodland NVC classes relate to local soil types through the ‘Soil Biodiversity’. Suitable NVC categories for this NCA include:

- W4 - Birch woodland with purple moor grass
- W6 – Alder woodland with stinging nettle
- W8 - Lowland mixed broadleaved woodland with dog’s mercury
- W10 - Lowland mixed broadleaved woodland with bluebell

- W11 - Upland oak-birch woodland with bluebell
- W14 - Beech-oak woodland with bramble
- W17 - Upland oak-birch woodland with bilberry

The Forestry Commission’s Ecological Site Classification (ESC) Tool⁹ can be used to inform appropriate species mixes for sites. This tool takes into account local conditions such as soil type, moisture and exposure, and also includes likely suitability in a range of future climate scenarios so that woodlands can be designed that are resilient in the face of a changing climate. Analysis of the ESC tool outputs should be used in conjunction with local site knowledge and management objectives.

It is important to remember that species choice must be appropriate to the site and local conditions, so although use of southerly provenance plants and seeds may help to improve resilience to future climate change this must not be used as a justification for planting non-native species in semi-natural habitats outside of their natural range.

5.2 WOOD-PASTURE & AGROFORESTRY

Agroforestry is a land management approach which combines trees with crop and livestock agriculture. This enables land to produce food whilst also delivering additional ecosystem services. Wood pasture and hedgerows are examples of traditional agroforestry, as are more modern systems like strip-planting and shelter belts.

Creation of wood pasture is a suitable option in areas where woodland cover is perhaps already relatively high, or where creation of closed-canopy woodland is not desired. Wood pasture presents an opportunity for combining trees and shrubs with enhancements of grasslands to provide additional biodiversity benefits. Improving the botanical diversity of grassland in planned wood pasture areas can be achieved through re-seeding with appropriate species mixes, or through application of green hay ideally from a site in the vicinity of the creation site. Naturalistic grazing can continue after trees are planted in wood pasture creation, provided that they are effectively protected from livestock. One method of doing this is through creation of ‘silvopasture roundels’ – fenced areas within the pasture planted with a mix of broadleaf species with future ‘feature’ trees in the centre (e.g. oak/beech/lime) surrounded by a combination of thorny species to protect the centre and browsable species that provide additional forage for livestock.

To maximise their benefit as shelter for livestock, shelter-belts or silvopasture strips should be planted north-south, as the prevailing wind direction in the UK is generally westerly. Larger trees should be placed centrally (e.g. oak), with smaller tree species alongside (e.g. silver birch). Around the outside of shelter belts, clusters of shrubs such as willow, hazel and elder can be planted.

Species selection should be informed by species present in the surrounding landscape, and by consulting Derbyshire County Council’s planting and management guidelines. Suitable tree species for wood pasture creation include long-lived species such as pedunculate oak, beech, alder or birch, or fruit-bearing varieties such as apple or pear. Woody scrub is an important component of many wood pasture habitats and species such as hawthorn and blackthorn can be chosen to surround the ‘standard’ trees as in time these will provide protection for tree regeneration as well as a source of nectar for invertebrates.

5.3 HEDGEROWS

It is possible to identify lost field boundaries by studying historic mapping tools such as the National Library of Scotland¹⁰. When seeking to plant hedges the first option should be the restoration of historic field boundaries and the connecting of isolated patches of woodland and hedgerows.

Hedges can be an effective biosecurity measure between farms when planted around boundaries as they prevent livestock from escaping farms and mixing with neighbouring stock. Hedgerows can be an effective tool to reduce the rate of soil erosion and surface water runoff during periods of high rainfall. To mitigate the effects of surface water run-off, hedges should be planted at a right angle to slopes to intercept the flow of water.

Hedges should be planted using locally relevant species by following species selection guidance in PDNPA’s Wooded Landscapes Plan. Newly planted whips should be protected, ideally using a temporary line of fencing either side which can be removed once the plants have become established. New hedgerows should be planted between October – February, not into frozen or waterlogged ground. Planting standards along hedgerows should be done as a matter of course, particularly at corners of fields, to provide a degree of structural diversity. These plants should be avoided when cutting to enable them to grow above the canopy of the hedge itself, which will provide shelter, food, nesting sites and song posts for bird species. They also improve connectivity along hedgerows between



woodlands, refuge for pollinating insects and natural predators which control crop pests, and as they mature in time can develop features which will be suitable for roosting bats.

5.4 PROTECTION

To ensure the successful establishment of young trees and shrubs, it is essential to implement protective measures both against livestock and wild deer. Livestock should be excluded from habitat creation areas through appropriate fencing, at least during the initial establishment period. Fencing must be carefully planned to maintain access to fields while minimizing any potential negative impacts on protected species, archaeological features, and the broader landscape character. When creating new wood pasture, where grazing of the surrounding field will continue, more heavy-duty tree protection will be needed e.g. galvanised welded mesh tree guards supported with fencing posts, purpose-built guards such as Cactus Tree Guards, or using a roundel design as described above.

While individual tree tubes may provide some level of protection, they should only be used when absolutely necessary. Tree tubes alone are insufficient for safeguarding plants from livestock and offer only limited protection against browsing by larger wild deer species, such as red and fallow deer. Where these species are present, tubes must be of adequate height to protect the growing tops of trees. Additionally, small mammals, such as voles, can cause damage to newly planted trees. Encouraging natural predators—such as birds of prey—through the strategic placement of perches can be an effective means of managing small mammal populations during the early establishment phase.

A landscape-scale approach to wild deer management would benefit successful regeneration of wooded habitats. While site-specific protective measures can be effective, long-term success will require collaboration with neighbouring landowners and local groups to assess population dynamics and the associated risks to newly established wooded habitats. Best practices in deer management should always be followed, and guidance is available from The Deer Initiative.

5.5 MAINTENANCE

During the first 3–5 years, ongoing maintenance will be necessary to support successful establishment. In areas designated for natural colonisation or direct seeding, regular monitoring is essential to assess the effectiveness of these methods and determine whether supplementary planting is required.

For planted schemes, maintenance should include routine inspections of newly planted trees, replacement of any failed specimens, and assessment of browsing pressure from deer to ensure it does not impede plant growth. Additionally, tree protection measures should be regularly checked and maintained. Once plants have become sufficiently established and no longer require individual protection, all protective materials should be responsibly removed, recycled, or disposed of in accordance with best environmental practices.

⁷<https://www.woodlandtrust.org.uk/plant-trees/woodland-creation-guide/>

⁸<https://www.ukso.org/>

⁹<http://www.forestdss.org.uk/geoforestdss/>

¹⁰<https://maps.nls.uk/os/>



6. FURTHER USEFUL RESOURCES

6.1 NATURAL ENGLAND

Natural England (2008) *Hedgerow planting: Answers to 18 common questions*: https://hedgelink.org.uk/cms/cms_content/files/75_ne_hedgerow_planting.pdf

6.2 DERBYSHIRE WILDLIFE TRUST

Derbyshire Wildlife Trust (2023) *Woodlands: A practical guide for landowners in the Derbyshire Derwent catchment*. Available from: <https://www.derbyshirewildlifetrust.org.uk/sites/default/files/2022-10/landowners%20handbook-woodland%20creation.pdf>

Derbyshire Wildlife Trust (2023) *Natural Flood Management Measures: A practical guide for landowners in the Derbyshire Derwent catchment*. Available from: https://www.derbyshirewildlifetrust.org.uk/sites/default/files/2022-10/landowners%20handbook_NFM.pdf

6.3 WOODLAND TRUST

Herbert, S., Hotchkiss A., Reid C. & Hornigold, K. (2022) *Woodland Creation Guide*, Woodland Trust (Available from: <https://www.woodlandtrust.org.uk/plant-trees/woodland-creation-guide/>)

6.4 FORESTRY COMMISSION

Forestry Commission (2024). *The UK Forestry Standard 5th edition*, Forestry Commission, Edinburgh. Available from: www.forestry.gov.uk/publications

Forestry Commission (2021). *Using natural colonisation for the creation of new woodland*. Forestry Commission, Edinburgh. Available from: <https://www.gov.uk/government/publications/using-natural-colonisation-for-the-creation-of-new-woodland>

Rodwell, J & Pattinson, G. (1994) *Bulletin 112: Creating New Native Woodlands*. (ARCHIVED) Forestry Commission, Edinburgh. Available from: <https://cdn.forestresearch.gov.uk/1994/03/fcbu112.pdf>

Woodland Creation Hub including information on current funding opportunities. Available from: <https://www.gov.uk/guidance/tree-planting-and-woodland-creation-overview>

6.5 DEFRA

Working with Natural Processes to Reduce Flood Risk. Available from: https://assets.publishing.service.gov.uk/media/6036c730d3bf7f0aac939a47/Working_with_natural_processes_one_page_summaries.pdf

Defra, Forestry Commission, Natural England (2023) *Guidance to help inform when an upland breeding bird survey is needed and when woodland creation is appropriate*. https://assets.publishing.service.gov.uk/media/64c242c382738800145a3f19/July_2023_Trees_and_Wader_Guidance__V5_.pdf

6.6 INNOVATIVE FARMERS

Silvopasture design: How to design shelter belts, also known as living barns: <https://www.innovativefarmers.org/knowledge-hub/silvopasture-design-how-to-design-shelter-belts-also-known-as-living-barns/>

Silvopasture design: how to design open grazed clustered wood pasture: <https://www.innovativefarmers.org/knowledge-hub/silvopasture-design-how-to-design-open-grazed-clustered-wood-pasture/>

How to design regular spaced silvopasture strips on your farm: <https://www.innovativefarmers.org/knowledge-hub/silvopasture-design-how-to-design-regular-spaced-silvopasture-strips-on-your-farm/>

6.7 THE DEER INITIATIVE

Best practice guidance on wild deer management: <https://thedeerinitiative.co.uk/guides-landing-basc/>

7. ACKNOWLEDGEMENTS & CITATIONS

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- Peak District National Park Authority
- Forestry Commission

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Derwent Valley Mills World Heritage Site Management Plan 2020-2025 - <https://managementplan.derwentvalleymills.org/>

Derbyshire Wildlife Trust (2024) *Guiding Principles for Wooded Habitat Creation in the Peak Fringe and Lower Derwent*. DWT, Middleton.

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Natural England (2014) *European Site Conservation Objectives for South Pennine Moors SAC (UK0030280)*. Available from: <https://publications.naturalengland.org.uk/publication/4973604919836672>

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Peak District National Park Authority (2022) *Landscape Strategy 2023-2032*. Available from: <https://democracy.peakdistrict.gov.uk/documents/s49687/Appendix%201-%20Landscape%20Strategy%202022%20-%20FINAL%20COLLATED.pdf>

Peak District National Park Authority (2022). *The Wooded Landscapes Plan: increasing tree and scrub cover in the Peak district National Park landscapes (2022-2032)*. Available from: https://www.peakdistrict.gov.uk/__data/assets/pdf_file/0027/447255/Wooded-Landscapes-Plan-Final-Draft-July-22.pdf

South Pennine Moors Designated Special Area of Conservation (SAC). Available from: <https://sac.jncc.gov.uk/site/UK0030280>

8. LIST OF ACRONYMS

- DBRC – Derbyshire Biological Record Centre
- DVMWHS – Derwent Valley Mills World Heritage Site
- DWT – Derbyshire Wildlife Trust
- EIA – Environmental Impact Assessment
- ESC – Ecological Site Classification
- LCT – Landscape Character Type
- LWS – Local Wildlife Site
- NCA – National Character Area
- NFM – Natural Flood Management
- NVC – National Vegetation Classification
- PDNP – Peak District National Park
- PDNPA – Peak District National Park Authority
- SAC – Special Area of Conservation
- SPA – Special Protection Area
- SSSI – Site of Special Scientific Interest
- UKFS – UK Forestry Standard
- UKSO – UK Soils Observatory
- WHS – World Heritage Site

APPENDIX 1: MITIGATION MEASURES

Table 1: How protected and special features in the Peak Fringe and Lower Derwent will be conserved during the creation of new wooded habitats

Feature	Impact of new wooded habitats	Survey requirements	Mitigation	Management Plan
Grass Moorland	Reduction of open moor and breeding/foraging habitat for red list bird species	Expert advice to be sought from Natural England where this priority habitat is present	<ul style="list-style-type: none">Planting should generally avoid areas of moorlandHowever, in some areas planting around the edges of moorland may be appropriate in some areas. Local advice should be sought from Derbyshire Wildlife Trust or Moors for the Future.Woodland edges should comprise widely spaced trees (<20% cover) to reduce impact of predators on ground-nesting birdsHedgerows should not be planted in open moorland	<ul style="list-style-type: none">Management plan to consider impact of increased predator shadow on breeding wadersMonitor nearby breeding wader hotspots to ensure no unacceptable impacts upon these species
Floodplain Grazing Marsh Semi-improved grassland Calcareous/limestone grassland Lowland dry acid grassland Lowland meadows Calaminarian grasslands	Potential for loss of existing species-rich grasslands	Areas of species rich grasslands should be mapped	<ul style="list-style-type: none">Exclude areas of species-rich grassland from closed canopy woodland creation.Creation of wood pasture and hedgerows may be appropriate – contact appropriate consultees for advice	Monitor key indicator species for the habitat
Lowland fens Purple Moor Grass and Rush Pastures Upland flushes, fens and swamps	Increases in tree and scrub cover	Area of these habitats to be mapped	<ul style="list-style-type: none">Seek advice from list of consulteesNative tree and scrub cover should not exceed 20%Any tree planting should be widely spaced – minimum 15m spacingTree planting should avoid wet flushes and acid flushes, and maintain these habitats as open space within woodlands/wood pastureHedgerows should not be planted across open habitats20m buffer from woodland to be established around acid flushesLight grazing may be an acceptable method of ensuring open habitats are maintained.	<p>Habitat monitoring should be undertaken prior to and following habitat creation works, including:</p> <ul style="list-style-type: none">Baseline surveys in Y1Annual monitoring of sites 3-5 years after habitat creation to identify priority areas for maintaining open ground. <p>Targets to ensure that buffer zones are maintained as open habitat through ongoing management</p>
Lowland heathland Upland heath	Increases in tree and scrub cover	Area of these habitats to be mapped	<ul style="list-style-type: none">Local advice should be sought for planting schemes in these areas.Native tree and scrub cover should not exceed 20%Any tree planting should be widely spaced – minimum 15m spacing	<p>Habitat monitoring should be undertaken prior to and following habitat creation works, including:</p> <ul style="list-style-type: none">Baseline surveys in Y1Annual monitoring of sites 3-5 years after habitat creation to identify priority areas for maintaining open ground. <p>Targets to ensure that buffer zones are maintained as open habitat through ongoing management</p>



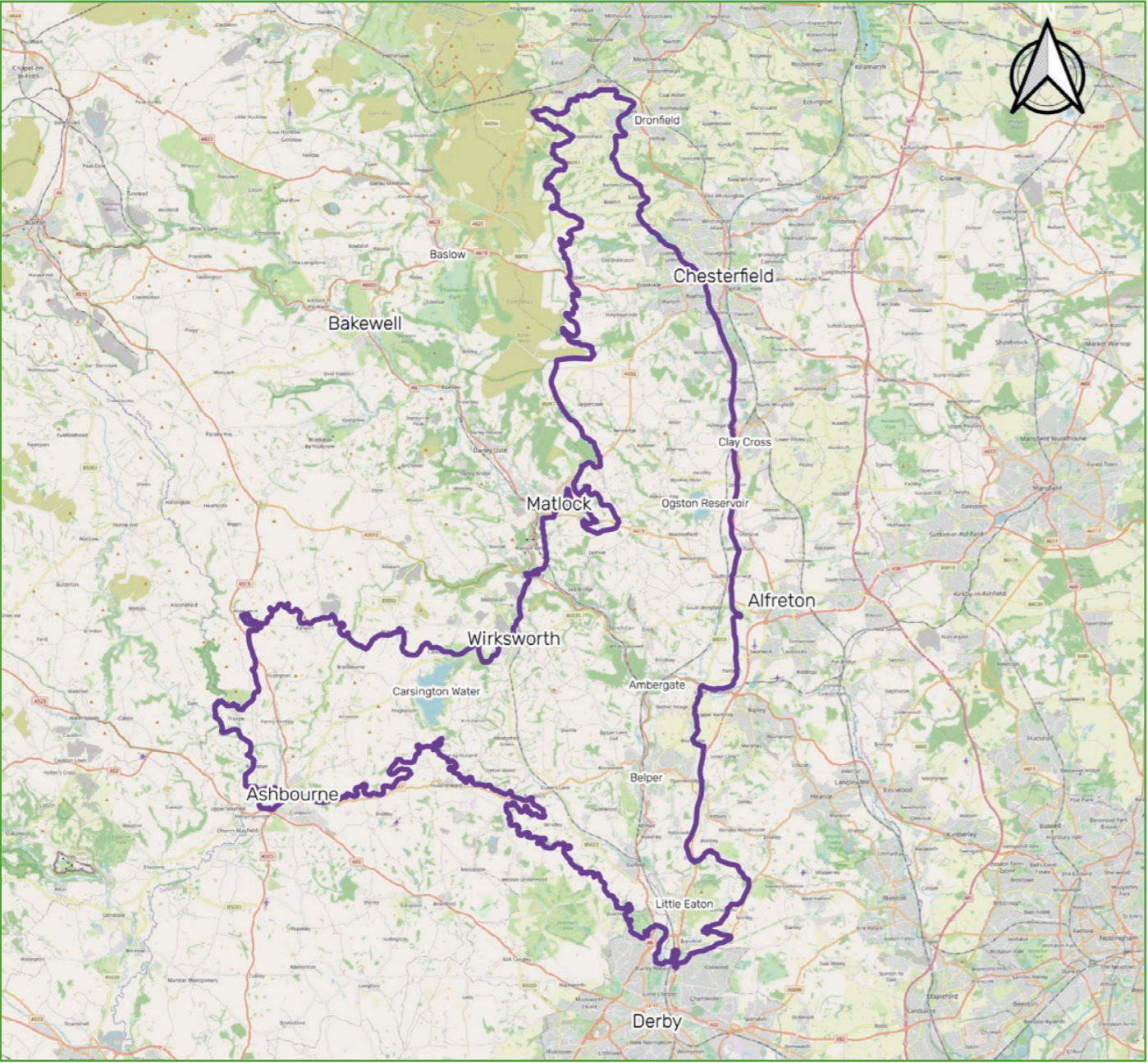
Table 1: Continued

Feature	Impact of new wooded habitats	Survey requirements	Mitigation	Management Plan
Upland breeding waders e.g. curlew, lapwing, golden plover	Loss of open grassland for nesting Increase in 'predator shadow'	Consultation with LERC and assessment of site under Defra/Forestry Commission/ Natural England guidance Breeding bird survey and ecological impact assessment to determine potential impact of woodland creation on breeding waders	<ul style="list-style-type: none">• Woodland design will need to account for presence of breeding waders and be designed to prevent increase in predation or loss of suitable breeding habitat	Targets to ensure that areas suitable for breeding waders are maintained as open habitat through appropriate habitat management
Archaeological and other cultural heritage features	<ul style="list-style-type: none">• Encroachment of tree and shrubs potentially obscuring and damaging features of interest• Negative effects on views and significant aspects of the setting	Consultation with local historic environment expert to map all known heritage assets within proposals and undertake impact assessment where necessary	<ul style="list-style-type: none">• Establish a minimum 20m buffer around features• Incorporate features into open ground• Fences must avoid archaeological features and be sited over 10m away	Targets to ensure that buffer zones are maintained as open habitat through ongoing management
Geological features	Encroachment of tree and shrubs potentially obscuring and damaging features of interest	Consultation with local geological expert to map all known features within proposals and undertake impact assessment where necessary	<ul style="list-style-type: none">• Geological features to be incorporated into open space within proposals• Where trees are considered appropriate these should be widely spaced at a minimum 15m	Targets to ensure that buffer zones are maintained as open habitat through ongoing management

APPENDIX 2: NCA LOCATION MAP

PEAK FRINGE & LOWER DERWENT NATIONAL CHARACTER AREA

Location Map



Legend

 Peak Fringe & Lower Derwent



Basemap: © Map data ©2024 OSM



